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from Sumatra, with Descriptions of Three New Species

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## The Army Ant Genus *Aenictus* (Hymenoptera, Formicidae) from Sumatra, with Descriptions of Three New Species\*

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**Abstract** Seven Sumatran species of the ant genus *Aenictus* are revised. Of these, three species, *A. hottai*, *A. latifemoratus* and *A. minutulus*, are described as new and the other three species, *A. cornutus*, *A. dentatus* and *A. laeviceps*, are recorded for the first time from Sumatra.

The genus *Aenictus* SCHUCKARD, belonging to the subfamily Dorylinae of the family Formicidae, is mainly distributed in the Indo-Australian Region. WILSON (1964) revised the Indo-Australian species of the genus and listed 34 species, but excluded the males from his revision, because so few worker-male associations have been established among the Indo-Australian forms. WILSON concluded that to include a separate male-based classification in his revision would eventually create too much nomenclatural confusion.

Only one species, *A. gracilis* EMERY, has been recorded from Sumatra in worker caste. Recently we have examined specimens of the genus from West Sumatra. As a result, we recognized six species, of which three are new to science and the other three are newly recorded from there. In this paper these three new and three newly recorded species of the genus *Aenictus* are added to the army ant fauna of Sumatra. A key to the Sumatran species is also provided.

Measurements, indices and special terms used in this paper follow those in WILSON (1964).

### *Aenictus cornutus* FOREL

*Aenictus cornutus* FOREL, 1900, *Annl. Soc. ent. Belg.*, **44**: 75.

**Material examined.** 4 workers, Lubuk Gadang, W. Sumatra, 21–23. VIII. 1985, Sk. YAMANE leg.

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*Distribution.* Sumatra (new record), Borneo.

*Aenictus dentatus* FOREL

*Aenictus Aikeni* var. *dentata* FOREL, 1911, Bull. Soc. Vaud. Sci. nat., Lausanne, 47: 383.

*Aenictus dentatus*: WILSON, 1964, Pacif. Ins., 6: 460.

*Material examined.* 2 workers, Lubuk Gadang, W. Sumatra, 21–23. VIII. 1985, Sk. YAMANE leg.

*Distribution.* Sumatra (new record), Borneo, India, Malaya.

*Aenictus hottai* n. sp.

(Figs. 1–2)

*Holotype worker.* Head length (HL) 1.08 mm; head width (HW) 0.95 mm; scape length (SL) 0.88 mm; cephalic index (CI:  $HW \times 100 / HL$ ) 88; scape index (SI:  $SL \times 100 / HW$ ) 93; WEBER's length of mesosoma (WL) 1.55 mm; dorsal mesosoma width (DMW) 0.40 mm; petiolar node length (PNL) 0.63 mm; petiole height (PH) 0.48 mm; dorsal petiole width (DPW) 0.30 mm; total length (TL) 3.9 mm.

Head slightly longer than broad, with slightly convex sides; in frontal view almost straight occipital border. Mandibles broad and triangular with a large acute apical tooth followed by a series of about 17 minute denticles. Clypeus feebly convex anteriorly. Antennae 10-segmented; scape long, reaching the occipital border of head; 2nd segment longer than broad; 3rd segment as long as broad; 4th to 6th segments each slightly longer than broad; 7th to 9th segments each as long as broad; 10th segment longer than broad,  $2.0 \times$  as long as broad.

General form of mesosoma, petiole and postpetiole as shown in Fig. 2. Propodeal junction acutely angulate. Dorsum of petiole convex and not forming anterodorsal corner. Subpetiolar process large and oblong; anterior corner rounded, posterior corner produced into a process with blunt tip. Legs long, the length of fore femur 1.25 mm.

Head, mesosoma, petiole, postpetiole, and legs microreticulate and opaque; gaster densely micropunctate with surface only subopaque, slightly shining. Pilosity moderately abundant and relatively long, the length of the longest pronotal hair about 0.48 mm. Ground color reddish brown; antennal funiculus, basal parts of antennal scapes, tibiae, and tarsi of all legs blackish brown. Vertex darkened. "Typhlatta spots" absent.

*Holotype.* Worker, Ulu Gadut nr Padang, W. Sumatra, Indonesia, 27–30. VIII. 1985, Sk. YAMANE leg. *Paratypes.* 9 workers, same data as the holotype.

*Type depository.* The holotype and four paratypes are deposited in the collection of the Zoological Museum, Bogor (LIPI), and the other paratypes are in the collection of the Department of Biology, Kagoshima University.



Figs. 1-2. *Aenictus hottai* n. sp., worker; 1, head; 2, mesosoma, petiole and postpetiole.

**Remarks.** The present new species is easily distinguished from the other known species of this genus by broader and triangular mandibles, absence of "Typhlatta spots" and developed subpetiolar process. One of the specimens is tinged with orange and is much brighter than the holotype.

#### *Aenictus gracilis* EMERY

*Aenictus* (*Typhlatta*) *gracilis* EMERY, 1893, Rev. suisse Zool., 1: 187.

*Aenictus martini* FOREL, 1900, J. Bombay nat. Hist. Soc., 13: 473. [Syn. WILSON, 1964.]

*Aenictus martini* var. *boelianensis* FOREL, 1913, Zool. Jahrb. Syst., 38: 20. [Syn. WILSON, 1964.]

*Eciton* (*Aenictus*) *fergussoni* [!] subsp. *elongata* [!] KARAWAJEW, 1926, Treubia, 8: 424. [Syn. WILSON, 1964.]

**Distribution.** Sumatra, Malaya, Borneo, Ceylon, Burma.

**Remarks.** This species was recorded by FOREL (1913) from Sumatra, but is not found in our material.

#### *Aenictus laeviceps* (Fr. SMITH)

*Typhlatta laeviceps* Fr. SMITH, 1858, J. Proc. Linn. Soc. Lond., 2 (Zool.): 79.

*Aenictus laeviceps* var. *smythiesii* FOREL, 1900, J. Bombay nat. Hist. Soc., 13: 465. [Syn. WILSON, 1964.]

*Aenictus fergussoni* var. *breviceps* FOREL, 1912, Notes Leyden Mus., 34: 105. [Syn. WILSON, 1964.]

*Eciton* (*Aenictus*) *fergussoni* var. *sundaica* KARAWAJEW, 1927, Mem. Acad. Sci. Ukraine, 7: 7. [Syn. WILSON, 1964.]

**Material examined.** 20 workers, Lubuk Gadang, W. Sumatra. 21-23. VIII. 1985, Sk. YAMANE leg.; 8 workers, Maninjau, W. Sumatra, 7-9. VIII. 1985, Sk. YAMANE & S. YAMANE leg.

**Distribution.** Sumatra (new record), Borneo, Java, Philippines, China, Assam, Thailand.

*Aenictus latifemoratus* n. sp.

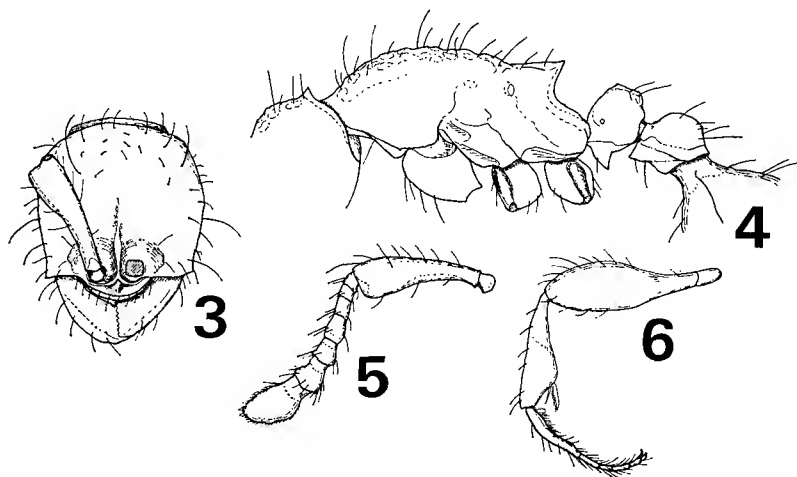
(Figs. 3–6)

*Holotype worker.* HL 0.93 mm; HW 0.80 mm; SL 0.60 mm; CI 86; SI 75; WL 1.23 mm; DML 0.53 mm; PNL 0.30 mm; PH 0.40 mm; DPW 0.28 mm; TL 3.5 mm.

Head massive, with weakly convex sides, and seen from front, occipital border convex; occiput with a large, well demarcated collar. Mandibles broad and triangular, with a large acute apical tooth followed by a series of 7–8 denticles. Clypeus anteriorly well convex. Antennae 8-segmented; scape flat and incrassate, widely and weakly grooved below, not reaching the occipital border of head; 2nd and 3rd segments each broader than long; 4th to 8th segments each longer than broad; 7th segment  $1.2\times$  as long as broad; 8th segment  $2.0\times$  as long as broad.

Mesosoma in profile weakly convex dorsally, arching from anteriormost of pronotum to posteriormost of metanotum. Basal face of propodeum straight. Propodeal junction acutely angulate. Seen from side, petiole trapezoidal, anteriorly weakly convex; anterodorsal and posterodorsal corners angulate. Postpetiole dorsally convex, not forming corners. Subpetiolar process large and triangular (Fig. 4). Coxae large. Femora flat and incrassate, in apical 1/2 deeply grooved below. Tibiae also flat and incrassate, but without ventral groove (Fig. 6).

Head reticulate with micropunctures; mandibles and antennae microreticulate. Mesosoma opaque, reticulate with numerous micropunctures. Petiole and postpetiole densely micropunctate. Gaster and legs smooth and shining. Pilosity moderately abundant; length of the longest pronotal hair about 0.23 mm. Ground



Figs. 3–6. *Aenictus latifemoratus* n. sp., worker; 3, head; 4, mesosoma, petiole and postpetiole; 5, antenna; 6, foreleg.

color reddish brown; gaster and legs yellow; mandibles blackish brown. "Typhlatta spot" absent.

**Holotype.** Worker, Maninjau, W. Sumatra, Indonesia, 8. VIII. 1985, Sk. YAMANE & S. YAMANE leg. **Paratypes.** 3 workers, same data as the holotype.

**Type depository.** The holotype and one paratype are deposited in the collection of the Zoological Museum, Bogor (LIPI), and the other paratypes are in the collection of the Department of Biology, Kagoshima University.

**Remarks.** This species is unique in having 8-segmented antennae, and easily distinguished from the congeners by the incrassate antennal scapes, femora and tibiae, and the well-developed triangular subpetiolar process.

*Aenictus minutulus* n. sp.

(Figs. 7-10)

**Holotype worker.** HL 0.43 mm; HW 0.35 mm; SL 0.25 mm; CI 81; SI 71; WL 0.63 mm; DMW 0.25 mm; PNL 0.18 mm; PH 0.18 mm; DPW 0.13 mm; TL 1.7 mm.

Head rectangular, with almost parallel sides and in frontal view straight occipital border. Mandibles triangular, with a larger acute apical tooth followed by a series of 4 denticles. Anterior border of clypeus truncated. Antennae 10-segmented; scape exceptionally short and incrassate, approximately 1/2 of head length; 2nd segment longer than broad; 3rd segment as long as broad; 4th to 6th segments each slightly broader than long; 7th to 9th segments each as long as broad; 10th segment longer than broad,  $2.0\times$  as long as broad.

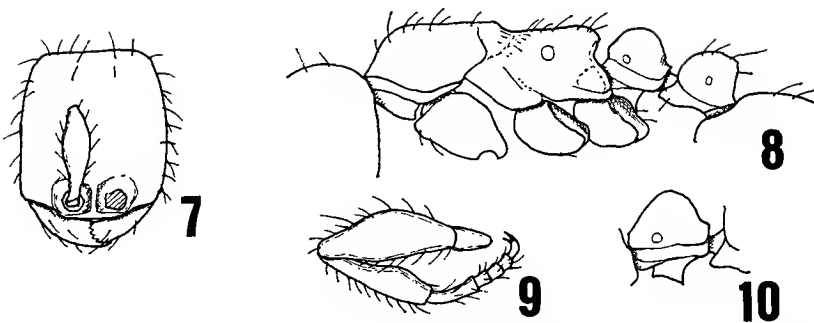
Mesosoma in profile straight dorsally; propodeal junction dully angulate. Seen from side, petiole well convex, not forming anterodorsal corner. Subpetiolar process large, rectangular; anterior and posterior corners each acutely angulate. Femora incrassate as in Fig. 9, each with ventral groove. Tibiae flat and incrassate.

Head smooth and shining. Dorsum of mesonotum and sides of propodeum microreticulate; remainder of mesosoma shining. Dorsa of petiole and postpetiole smooth and shining, lower 1/2 of sides of petiole and postpetiole microreticulate and opaque. Gaster smooth and shining. Pilosity moderately abundant; length of the longest pronotal hair about 0.10 mm. Ground color light brownish yellow; antennae, legs and gaster yellow. "Typhlatta spots" absent.

**Holotype.** Worker, Pulau Sipora, Mentawai Is., Indonesia, 28. VII. 1985, Sk. YAMANE & S. YAMANE leg. **Paratypes.** 3 workers, same data as the holotype.

**Type depository.** The holotype and one paratype are deposited in the collection of the Zoological Museum, Bogor (LIPI), and the other paratypes are in the collection of the Department of Biology, Kagoshima University.

**Remarks.** This species is similar to *A. piercei* WHEELER et CHAPMAN from India and the Philippines in having the small-sized body and incrassate femora. However, it is distinguished from the latter by angulate propodeal junction and much



Figs. 7-10. *Aenictus minutulus* n. sp., worker; 7, head; 8, mesosoma, petiole and postpetiole; 9, foreleg; 10, petiole and subpetiolar process.

smaller size.

### Key to the Sumatran Species of *Aenictus*

(Worker)

1. Antenna 8-segmented; femora and tibiae remarkably incrassate.....  
.....*A. latifemoratus* n. sp.
- Antenna 10-segmented ..... 2.
2. Humeri of pronotum produced into horn-like protuberances.....  
.....*A. cornutus* EMERY.
- Humeri of pronotum unarmed ..... 3.
3. Very small species (HL 0.43 mm, HW 0.35 mm); antennal scapes and femora  
incrassate; color brownish yellow.....*A. minutulus* n. sp.
- Larger species, HL exceeding 0.70 mm, HW exceeding 0.60 mm; antennal  
scapes and femora long and slender; color reddish brown to dark brown  
..... 4.
4. Subpetiolar process prominent and angular ..... 5.
- Subpetiolar process of a very low, flattened lobe barely distinguishable from  
main body of petiole..... 6.
5. Broad yellow "Typhlatta spots (two, symmetrically placed patches)" present  
on occiput; subpetiolar process triangular; propodeal junction smoothly  
rounded; head and pronotum smooth and shining.....  
.....*A. laeviceps* (Fr. SMITH).
- "Typhlatta spots" absent; subpetiolar process oblong; propodeal junction  
acutely angulate; head and pronotum microreticulate and opaque.....  
.....*A. hottai* n. sp.
6. Propodeal junction acutely angulate; occiput smoothly rounded with a large  
collar .....*A. dentatus* FOREL.
- Propodeal junction bearing a right-angulate ridge; small but distinct, obtuse

elevations present on each side of occiput.....*A. gracilis* EMERY.

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### References

- BARR, D., & GOTWALD, W. H., JR., 1982. Phenetic affinities of males of the army ant genus *Dorylus* (Hymenoptera: Formicidae: Dorylinae). *Can. J. Zool.*, **60**: 2652-2657.
- FOREL, A., 1913. Ameisen aus Sumatra, Java, Malacca und Ceylon. *Zool. Jahrb. Syst.*, **36**: 1-148.
- GOTWALD, W. H., JR., 1979. Phylogenetic implications of army ant zoogeography (Hymenoptera: Formicidae). *Annls. ent. Soc. Amer.*, **72**: 462-467.
- 1982. Army ants. In HERMANN, H. R. (ed.), *Social Insects*, **4**: 157-254. Academic Press, New York.
- WILSON, E. O., 1964. The true army ants of the Indo-Australian area (Hymenoptera: Formicidae: Dorylinae). *Pacif. Ins.*, **6**: 427-483.